Risk factors for developing hemolytic uremic syndrome or death among persons with *Escherichia coli* O157infection, FoodNet sites, 1997-2002

Alison L Drake, MPH[1]; C. Snider, MHS[1,2]; D. Vugia[3], MD; S Hurd, MPH[4]; J. Scheftel, DVM, MPH[5]; S. Zansky, PhD[6]; B. Shiferaw, MD, MPH[7]; A.C. Voetsch, PhD[1]; F.J. Angulo, DVM, PhD[1], P.M. Griffin, MD[1] and the FoodNet EIP Working Group

[1]Foodborne and Diarrheal Diseases Branch, DBMD, NCID, CDC, Atlanta, GA
[2]ASPH/FSIS Fellow, Atlanta, GA, [3]CA Department of Health Services, Berkeley, CA; [4]CT EIP, New Haven, CT; [5]Minnesota Department of Health, St. Paul, MN; [6]NY State Department of Health, Albany, NY; [7]Oregon Department of Human Services, Portland, OR

Background: *Escherichia coli* O157 infection is the leading cause of hemolytic uremic syndrome (HUS), a major cause of acute renal failure in children.

Methods: The Foodborne Disease Active Surveillance Network (FoodNet) conducted active surveillance at >600 clinical laboratories for laboratory-confirmed *E. coli* O157 in 9 states from 1997 through 2002. Active surveillance among pediatric nephrologists was also conducted for pediatric cases of HUS (age < 15 years); hospital discharge databases were reviewed for unreported pediatric HUS cases and adult cases of HUS. We combined data from these two surveillance systems to determine the proportion of persons with *E. coli* O157 infection who developed HUS, explore demographic risk factors for developing HUS, and examine risk factors for death.

Results: Among the 2137 laboratory-confirmed *E. coli* O157 cases, 119 (6%) developed HUS; this included 13% of children <5 years of age, 5% of children ages 5-14 years, 1% of persons ages 15-59 years, and 6% of persons ≥60 years. Children <5 years old were at the highest risk for HUS compared with persons ages 15-59 years (OR=21, 95% CI = 3.1 – 18.7). Females were more likely than males to develop HUS (7% vs. 4%, OR=1.7, 95% CI =1.2 – 2.6). Fifteen (0.7%) died, including 5 persons who did not develop HUS. Having HUS and age ≥60 years were independent risk factors for death.

Conclusions: Integrated FoodNet surveillance data indicate that, following *E. coli* O157 infection, children <5 years old and females are at greatest risk of developing HUS, and persons with HUS and the elderly are at greatest risk of death.